

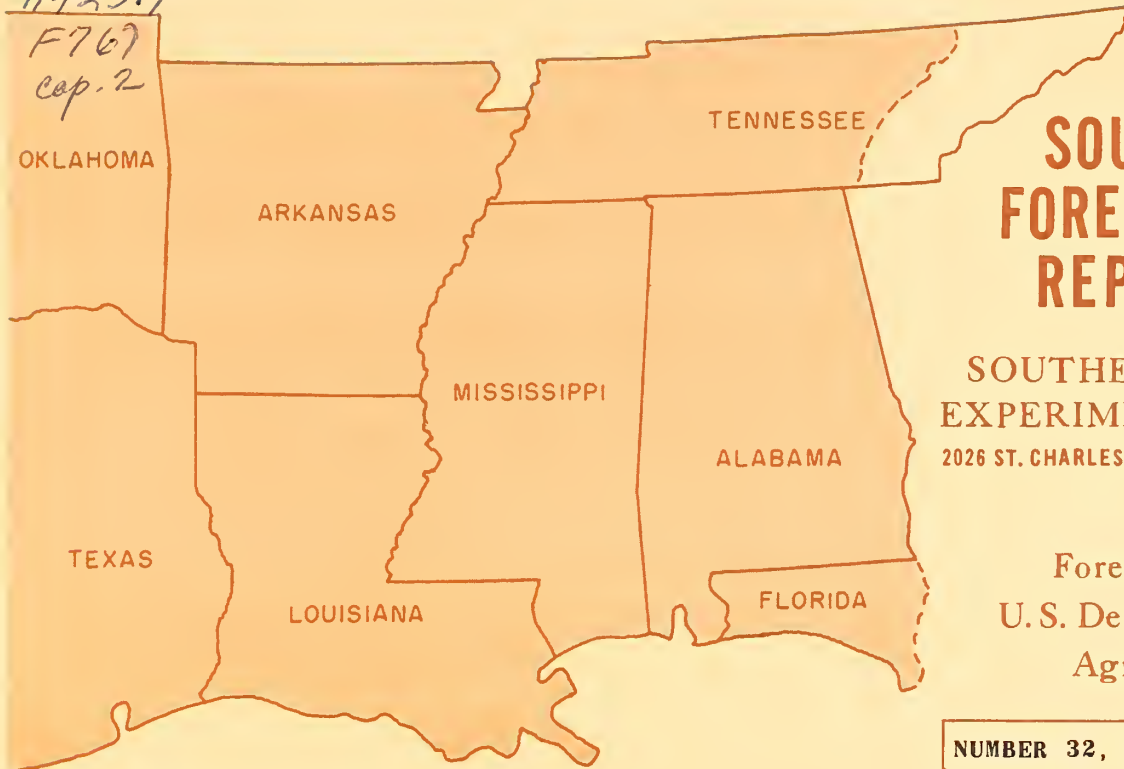
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SOUTHERN FOREST PEST REPORTER

SOUTHERN FOREST
EXPERIMENT STATION

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SUMMARY OF MIDSOUTH PEST CONDITIONS IN 1960

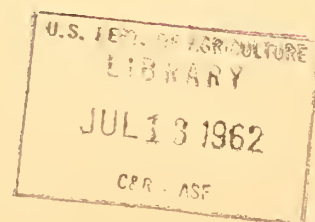
.... SOUTHERN PINE BEETLE AND BLACK TURPENTINE BEETLE WERE AGAIN THE MOST DESTRUCTIVE insect enemies of southern pines.

.... WOODBORERS CAUSED COSTLY HARDWOOD LUMBER DEGRADE by tunneling in living trees.

.... FOREST TENT CATERPILLAR DEFOLIATED EXTENSIVE AREAS OF BOTTOM-LAND HARDWOODS, seriously weakening trees and reducing growth in stands of gum and other species.

.... FUSIFORM RUST REMAINED THE MOST SERIOUS DISEASE ENEMY of young slash and loblolly pines.

.... EARLY DAMPING-OFF AND DROUGHT CAUSED LOSSES in some pine tree nurseries.



FOREST INSECTS

Pine Bark Beetles

Southern pine beetle. --In southeast Texas, populations of the southern pine beetle, Dendroctonus frontalis, increased rapidly in early summer. During the outbreak, more than 500 spot infestations (some covering more than 100 acres) on about 30 ownerships killed an estimated 10 million board feet of sawtimber and 30,000 cords of pulpwood. Cooperative control by industry, the Texas Forest Service, and the U.S. Forest Service kept losses from being much greater.

Wet weather handicapped control crews, but by September most of the outbreak appeared to be checked, and by late fall only about 4 small infestations remained. In December, however, fresh attacks were discovered on many sawtimber-size trees along 8 miles of power line right-of-way from Votaw toward Saratoga. Fresh branch stubs from recent heavy pruning and injury to trunks caused by climbing spikes had apparently attracted the beetles and rendered the trees susceptible.

The east Texas situation is better than at the end of last year, when 30 spots remained uncontrolled, but existing populations are still aggressive and may cause future trouble.

Black turpentine beetle. --The black turpentine beetle, Dendroctonus terebrans, remained active on most National Forests and on many industrial lands in Texas, Louisiana, Mississippi, and Alabama. As in the past, infestations were typically associated with logging operations on low, normally wet sites, and substantial expenditures have been necessary to protect valuable stands.

With the advent of warm weather, beetles now in untreated stumps and trees will complete development and spread to new logging areas. Population trends and intensity of infestations will depend upon the volume of timber cut on low, poorly drained sites, the extent and frequency of logging damage and stand disturbance, and soil-moisture relationships and other factors that affect stand vigor.

Ips beetles. --Ips beetle infestations were less severe than in recent years. Attacks were mostly localized in over-dense stands and on poor sites, cutting areas, and the edges of burns.

Pine Sawflies

Red-headed pine sawfly. --Defoliation by the red-headed pine sawfly, Neodiprion lecontei, was less widespread than last year. In southwest Louisiana, however, the insect reappeared in such numbers in the late spring that one landowner sprayed nearly 3,000 acres of young longleaf and slash pine plantations with DDT. Control was excellent.

Unidentified sawfly. --An unidentified species of sawfly was discovered feeding on slash pine at two locations in south Mississippi during late fall. It

had severely defoliated 1,000 acres in a natural stand 6 miles east of Ocean Springs. The other area was about 20 miles northwest of Bay St. Louis in a 5-year-old plantation of 400 acres, of which 250 acres were heavily defoliated. The life cycle and habits of the sawfly are unknown, but the insect may pose a threat to the many acres of slash pine that are planted in this area, as well as to natural stands.

Neodiprion excitans. --This sawfly, which caused severe defoliation in east Texas in 1958 and 1959, failed to reach outbreak proportions in 1960. Summer feeding was light, widespread, and spotty, and no heavy late-season population materialized.

Loblolly pine sawfly. --Neodiprion taedae linearis was scarce for the third consecutive year. In some other years it has been a common spring defoliator in southern Arkansas and northern Louisiana.

Pine Tip and Pitch Moths

Nantucket pine tip moth. --Rhyacionia frustrana killed tips and retarded growth in young loblolly and shortleaf pine plantations throughout the South. In some States this species has attracted more attention and comment than any other forest insect.

Pine pitch moth. --Dioryctria clarioralis damaged a young slash pine plantation near Gulfport, Mississippi. Terminals of stems and branches were mined for 6 to 24 inches from the tips and killed. The insect is common in the southeastern Atlantic Coast States and probably feeds on pines other than slash. It may become an important plantation pest in the Midsouth.

Pine Weevils

Pales and pitch-eating weevils. --Bark puncturing by the pales weevil, Hylobius pales, and the pitch-eating weevil, Pachylobius picivorus, killed pine seedlings on several thousand acres in central Louisiana. Heaviest damage was done in the fall of 1959 near fresh-cut stumps of seed trees, to which the beetles had been attracted. Lighter feeding occurred in the spring of 1960, presumably by weevils that had developed in the stumps.

Suspected weevil damage. --The leaders of many loblolly pines in several parishes in northern Louisiana have been dying from an unknown cause. The affected tops, which include from one to several whorls of branches, are mostly in stands 15 to 20 feet tall. Many leaders, but not all, contain broods of a weevil, probably Pissodes nemorensis. This species normally develops in dying pines and slash. Unfavorable soil conditions and restricted root development may have affected leader vigor and created conditions favorable for weevil development.

Miscellaneous Pine Insects

Bostrichid beetles. --In October and November, foresters in east Texas and southwest Mississippi noticed unusual insect activity in the bark of green pines that had been severely scorched by wildfire. Red boring

dust in bark crevices and around the base of many trees suggested attack by Ips beetles, but close examination revealed that the insects were not true bark beetles. Furthermore, boring was confined to the bark with no noticeable damage to the cambial region. The beetles have been tentatively identified as Bostrichids, possibly of the genus Stephanopachys. The beetles in this group are not known to be tree killers, but attacks could be easily confused with those of Ips beetles and thus lead to unnecessary cutting of trees that might otherwise live.

Pine spittlebug. --A spittlebug, probably Aphrophora parallela, produced abundant masses of spittle in the late spring on loblolly pines in east Texas and north-central Louisiana. Although populations were heavy and infestations widespread, no aftereffects were apparent.

Texas leaf-cutting ant. --Atta texana, an important defoliator of seedlings in parts of Louisiana and Texas, destroyed many planted and natural pine seedlings during the colder months.

Hardwood Insects

Woodborers. --Round-headed and flat-headed borers and the carpenter worm, Prionoxystus robiniae, continued to be the most important insect enemies of southern hardwoods. These borers cause tremendous value losses by tunneling in the wood of living trees, but they attract less attention than the more spectacular insects, such as defoliators.

Forest tent caterpillar. --During April and May Malacosoma disstria again severely defoliated extensive areas of water tupelo, blackgum, sweetgum, and other bottom-land hardwoods. In Louisiana, stands on about 250,000 acres immediately west of New Orleans, and on another area of the same size along the Atchafalaya Basin, were completely defoliated. An additional million acres, in localized stands, had some defoliation.

In the valley of the Alabama River in southern Alabama, the infestation covered about one million acres, 56,000 of which were defoliated heavily. Similar outbreaks have occurred annually since 1953, killing many trees and branches. Severely defoliated trees are estimated to grow at less than half their normal rate. The lack of reproduction resulting from the destruction of flowers is also causing concern.

Natural controls, including parasitic insects and disease organisms, have so far failed to reduce populations to endemic levels. It is likely that extensive and severe defoliation will occur again in the spring of 1961.

Other defoliators. --The spiny oak worm, Anisota stigma, the orange-striped oak worm, A. senatoria, the yellow-necked caterpillar, Datana ministra, and the variable oak-leaf caterpillar, Heterocampa manteo, stripped oaks over thousands of acres in east Texas and in localized areas in Arkansas, Louisiana, and Mississippi. Because defoliation occurred late in the season, severe growth loss is not expected.

FOREST DISEASES

The amount of damage that major diseases do to trees in the forest usually does not vary greatly from year to year. Thus, the fungi causing fusiform rust, heart rot, root rot, cankers, and some other diseases act on trees over a period of years. Once infection starts, the pathogen continues to grow even when weather is unfavorable for new infections. In nurseries, however, diseases vary enormously in importance with the weather. They may be almost absent one year and cause heavy cull the next. Most leaf diseases in the forest also vary considerably in effect, but few of them are of primary importance. Also in the forest are many species of facultative parasites that cannot damage healthy trees but cause losses to trees of low vigor. Such parasites were conspicuous during the prolonged drought of the early 1950's but are presently of little concern.

Nursery Diseases

In general, seedlings at most pine tree nurseries in the Midsouth were healthy and vigorous at lifting time. The most important losses in 1960 were attributed to drought, and early damping-off at several nurseries. Losses from fusiform rust were generally very low during 1960. Dry weather, unfavorable for rust infection, coupled with good fungicidal spray schedules, kept cull below 0.5 percent at most nurseries. At two--one in Alabama and one in Louisiana--a high rust potential was evidenced by 60 to 75 percent infection in unsprayed control plots, but even here controls kept losses low. Somewhat disconcerting was the finding of a small amount of infection 3 to 6 inches above ground, suggesting infection after the time considered safe for stopping the spraying program.

Root rot again was negligible, probably because most nurseries have fumigated their soil sometime during the past few years.

Gray mold (Botrytus and possibly other fungi) appeared in some dense beds. The mold killed some seedlings in the nursery but probably will not affect survival of outplanted seedlings. Attacks can be controlled by spraying infected beds with Ferbam during the fall.

Cone Rust

Though cone losses on slash pine were high along the Mississippi Gulf Coast, damage did not extend as far inland as in recent years. No cone rust was found in planted slash west of its natural range. The causal fungus, however, was common on live oak in east Texas. Conditions necessary for infection of pine flowers obviously did not occur in the spring of 1960, but there is no assurance that cone losses will not occur in the future. As a precaution, any valuable seed orchards or seed-producing areas for slash or longleaf pine should be located out of the coastal zone in which the alternate host, live oak, is common.

Oak Wilt

The oak wilt situation remains essentially unchanged. In the Midsouth the known distribution range of the disease is still limited to eastern

Oklahoma, the Ozark region of Arkansas and adjoining Mississippi bottom lands, and eastern Tennessee. An intensive survey of the bottom lands of eastern Arkansas and western Mississippi disclosed only one active infection center, in Clay County, Arkansas. None of the other known bottom-land centers in Arkansas, all found in 1950 and 1951, have remained active. Foresters are hopeful that wilt will remain unimportant in the valuable bottom-land stands of the Midsouth, but it still seems potentially dangerous. Vigilance should not be relaxed.

Fusiform Rust

Fusiform rust remains the chief disease enemy of young slash and loblolly pine stands. Heavy damage is developing in southwestern Louisiana and the eastern tier of counties in Texas, where young slash plantations have been established on extensive areas formerly stocked with longleaf. Thus the known area of high rust hazard has expanded considerably westward.

Annosus Root Rot of Pine

Additional infections of Annosus root rot have been found in slash pine plantations of northwest Louisiana. The rot occurs throughout the range of southern pines, but serious losses are mainly in slash plantations north of the usual planting range. An intensive survey is underway to obtain information on geographical, site, and species distribution of important losses. Until these factors have been adequately studied predictions of losses cannot be made.

Miscellaneous Diseases

Many live and post oaks died suddenly during the past year in the vicinity of Refugio, Texas. A fungus has been isolated from recently killed trees but the real cause has not been determined. The area involved is marginal for tree growth and some unknown environmental factor may play a decisive role.

The sycamore canker which damaged trees in the Mississippi River bottom lands a few years ago is much less prevalent now. Inoculations showed that the causal fungus is a facultative parasite able to attack during droughts.

Loblolly pine needle blight, caused by Hypoderma lethale and Scirrhia acicola, again was common throughout most of the Midsouth. While it causes serious disfigurement, there is still no evidence that it importantly affects growth of forest trees.

PEST PUBLICATIONS, 1960

Copies of the following publications are available on request to the Southern Forest Experiment Station, 704 Lowich Building, 2026 St. Charles Avenue, New Orleans 13, Louisiana.

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- Koenigs, J.W. 1960. Fomes annosus: a bibliography with subject index. South. Forest Expt. Sta. Occas. Paper 181, 35 pp.
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- Lightle, P.C. 1960. Brown-spot needle blight of longleaf pine. U.S. Dept. Agr. Forest Pest Leaflet 44, 7 pp., illus.
- Morris, R.C. 1960. Control of cottonwood insects with a systemic insecticide. Jour. Forestry 58: 718, illus.
- Moser, J.C. 1960. The case of the innocent ants. Forests and People 10(4): 30-33, illus.

